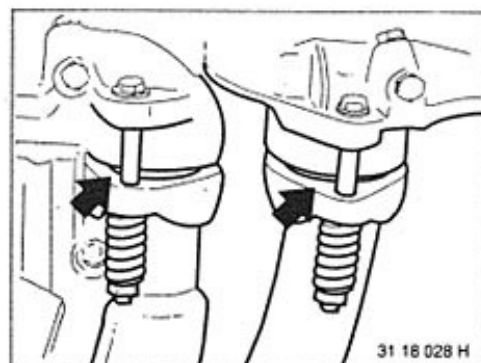


18 Exhaust system

18 00 020	Exhaust system, complete – remove and install (M70)	18- 0/1
020	Exhaust system, complete – remove and install (M60)	18- 0/3
020	Exhaust system, complete – remove and install (M73)	18- 0/4
18 10 031	Rear muffler – replace (connection with clamping sleeves)	18-10/1
18 12 . . .	Dismantling exhaust assembly (M70)	18-12/2
027	Rear muffler, right – replace (connection with welded sleeve)	18-12/3
061	Center muffler – replace (M73)	18-12/4
18 21 511	All exhaust mounts – replace	18-21/1
18 32 010	Exhaust catalytic converter, left or right – remove and install or replace (M73)	18-32/1

For additional work, refer to "Repair Instructions for 7 Series E38"

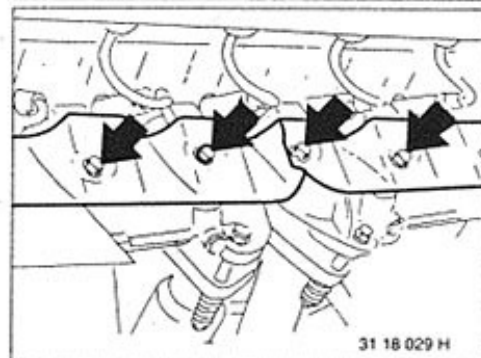
18 00 020 Removing and installing exhaust assembly (M70).



Note:

If work is carried out on the exhaust assembly or vehicle which affect the location of the exhaust pipes on the exhaust manifolds, the connection must be loosened and, after the work is complete, tightened back to specified torque.

Tightening torque 18 00 1AZ*

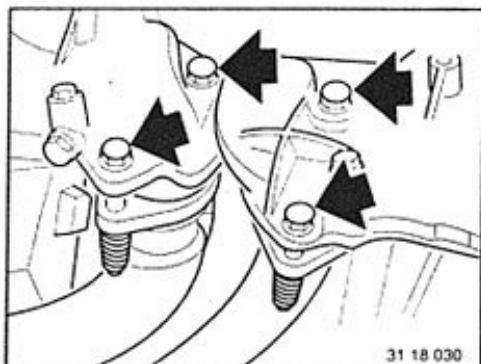


Aligning exhaust pipes on engine.

Remove underbody protection for engine.
Partially dismantle windshield wash container
Remove heat baffle plate from exhaust manifold.

Caution!

Do not distort the heat baffle plates.
Tightening torques*.

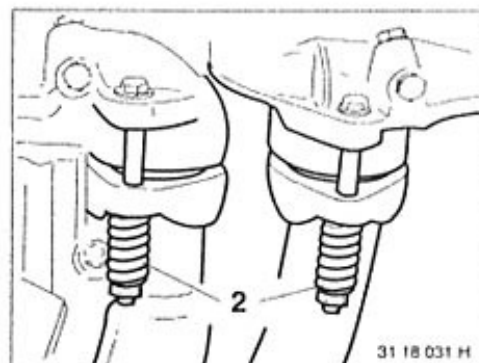


Unfasten connection of exhaust pipes on manifold.

Caution!

Do not tighten down exhaust pipes on manifold until complete exhaust assembly has been installed.

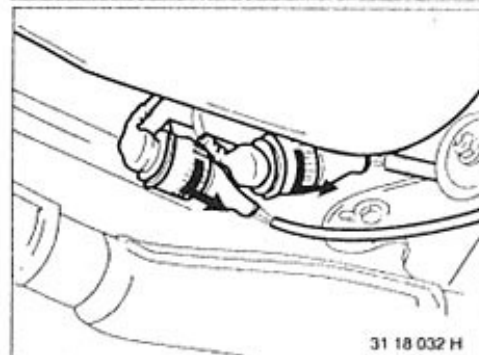
* Refer to Technical Data



Installation:

Flanges must be aligned parallel to one another.

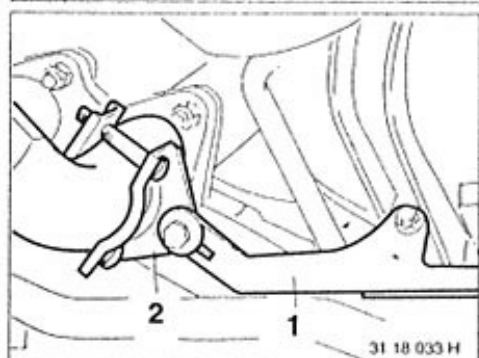
Springs (2) must not be preloaded in block.
Tightening torque specification 18 00 1AZ*



Disconnect plug for Lambda oxygen sensors.

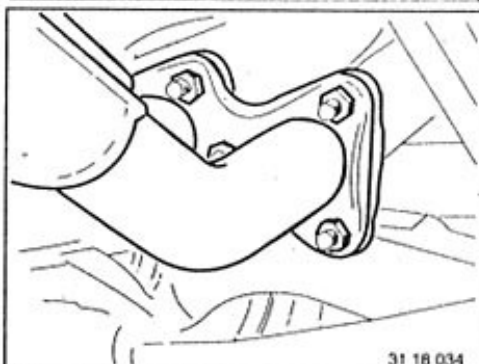
Caution!

Identify (mark) Lambda oxygen sensors before removal: do not confuse them.



Unscrew bracket (1) from transmission.

Only loosen and displace gripper clamps (2).

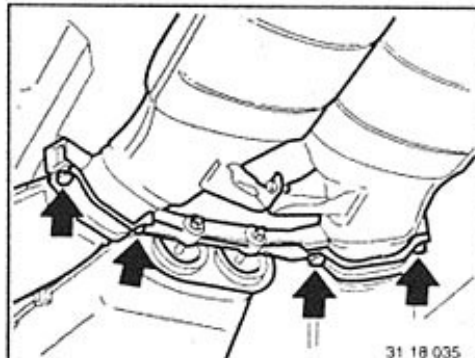


Unfasten flange connection between exhaust pipes and exhaust assembly.

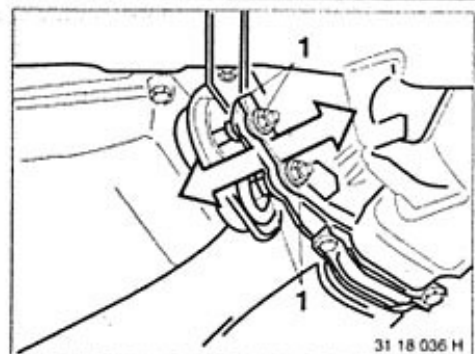
Installation:

Check gaskets, replacing if necessary.
Replace self-locking nuts.

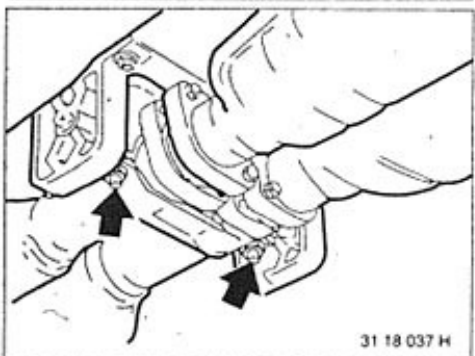
* Refer to Technical Data



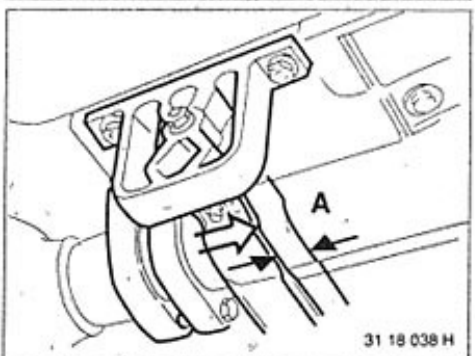
Support exhaust assembly on a lifting fixture.
(weight approx. 55 Kg.)
Unscrew transmission suspension from catalytic converter.



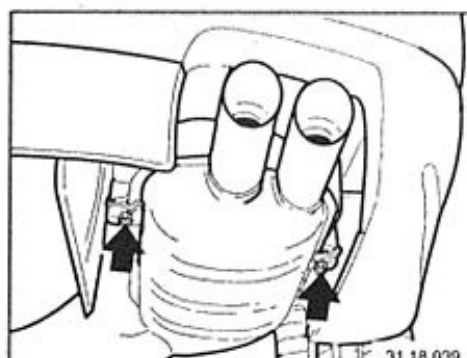
Installation:
Adjust the nuts (1) to secure the exhaust assembly without stresses.



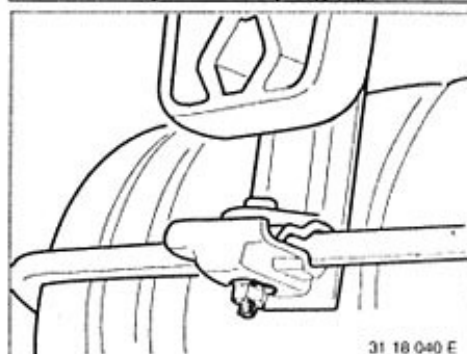
Unscrew rear suspension point for catalytic converter.



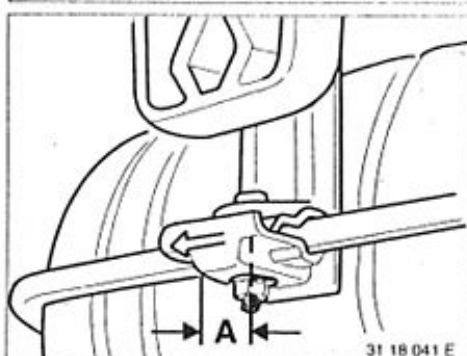
Installation:
Preload rubber mount in direction of travel
A = 10 mm.



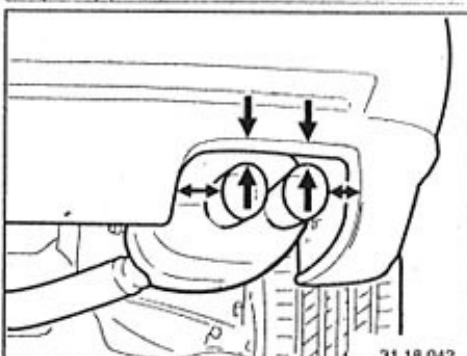
Unscrew all rear suspension points.
Remove exhaust assembly downwards.



Installation:
Arrangement of clamping brackets



Installation:
Preload rubber mount in direction of travel
A = 15 mm.

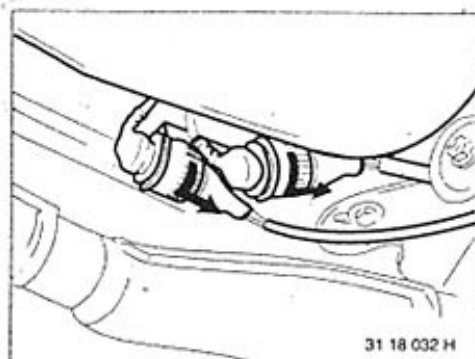


Installation:
Check location of tailpipes to body openings.
If necessary, loosen flange connections and align exhaust assembly.

18 00 020 Removing and installing exhaust assembly (M60).

Installation:

Check gaskets and replace if necessary.
Fit new self-locking nuts.
Coat threads with copper paste**

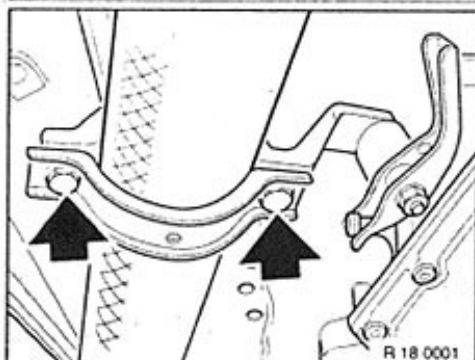


31 18 032 H

Disconnect plug for Lambda oxygen sensors.

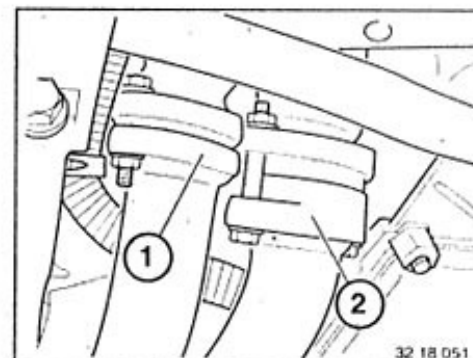
Caution!

Identify (mark) Lambda oxygen sensors before removal: do not confuse them.



R 18 0001

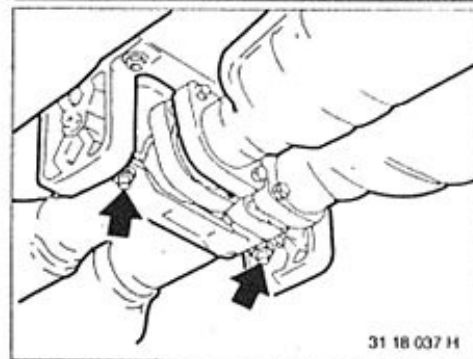
Unfasten clamps on both transmission brackets.



32 18 051

Note tightening sequence:

1. Outer exhaust manifolds on right and left (1), flange with ball
2. Inner exhaust manifolds on right and left (2), flange with gasket.



31 18 037 H

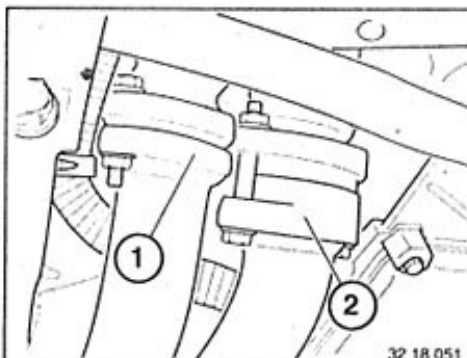
Unscrew suspension on the rear catalytic converters.
Subsequent procedure, refer to 18 00 020 (M70).

Support exhaust assembly with a lifting fixture. (Weight approx. 55 Kg.)

Unscrew flange connections between catalytic converter and left and right exhaust manifolds

18 00 020 Removing and installing complete exhaust system (M73)

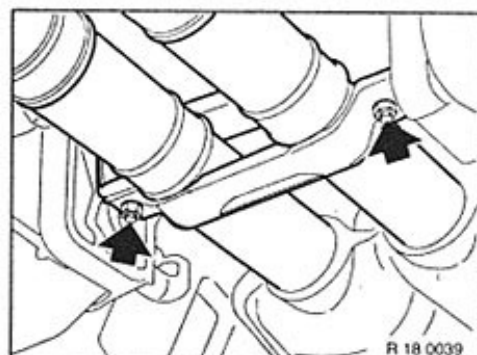
Disconnect plug connections from left and right Lambda oxygen sensors.
Unclip cable



32 18 051

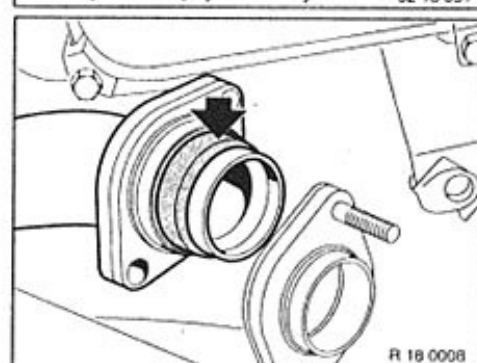
Unscrew and remove left and right catalytic converters from the exhaust manifolds.

Installation:
Replace self-locking nuts.
Coat threads with copper paste*.



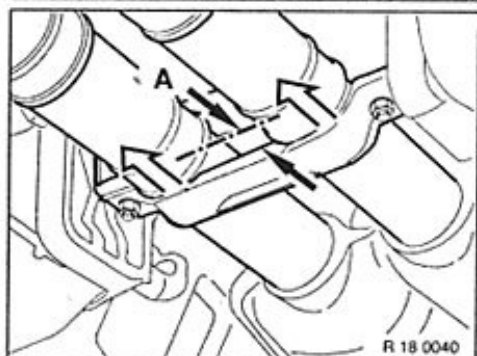
R 18 0039

Unscrew and remove mount from the catalytic converters.



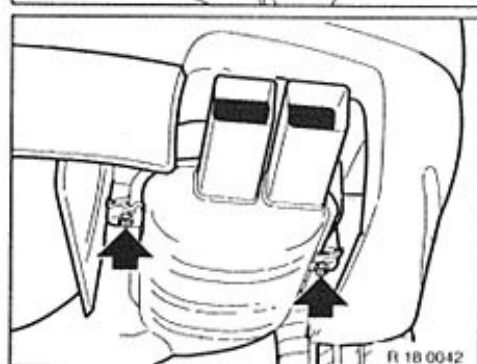
R 18 0038

Installation:
This joint only has a seal on the inside pipes.
Check seal and replace if necessary.



R 18 0040

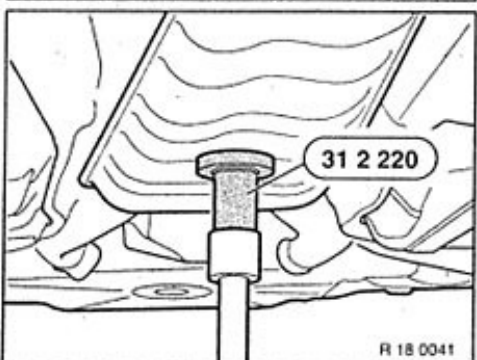
Installation:
Preload rubber mount in direction of travel A = 10 mm.



R 18 0042

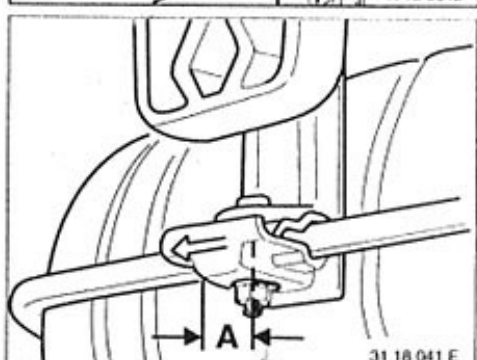
Unscrew and remove both clamping brackets from left and right rear mufflers.

Remove complete exhaust system.



R 18 0041

Support exhaust system with special tool 31 2 220.
(weight approx. 53 kg)

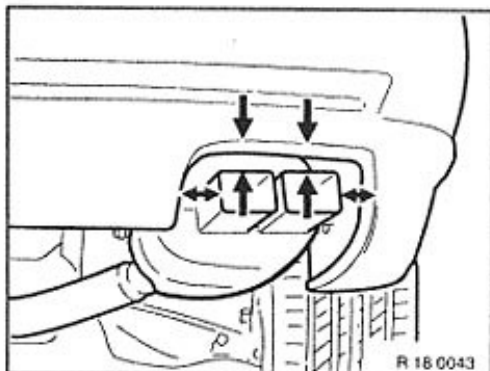


31 18 041 E

Installation:
Preload rubber mount in direction of travel A = 15 mm.

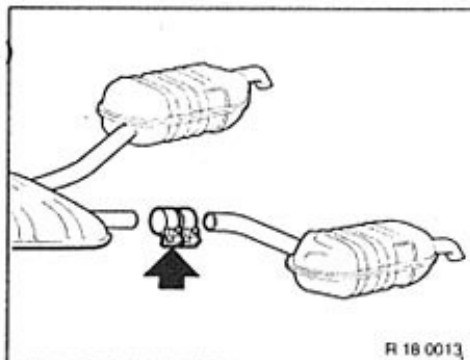
* Source of Supply: BMW Parts Service

18-0/5



Installation:
Note position of tailpipes in the body apertures.

18 10 031 Replacing rear muffler (connection with clamping sleeves)



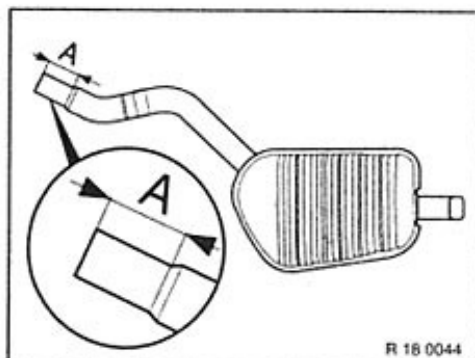
Install new rear muffler and secure with clamping sleeve.

Ensure that separating point lies in centre of clamping sleeve.

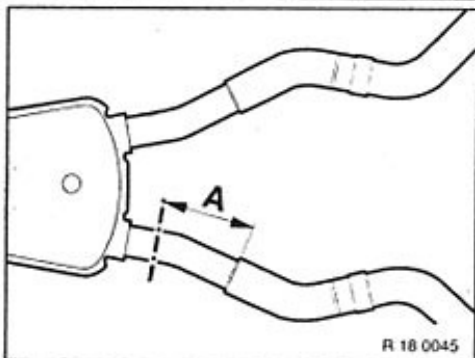
Caution!

Apertures on new rear muffler are sealed with adhesive film.

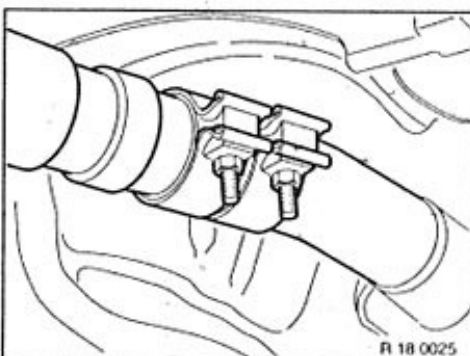
Remove adhesive film, including from contact faces of clamping sleeve.



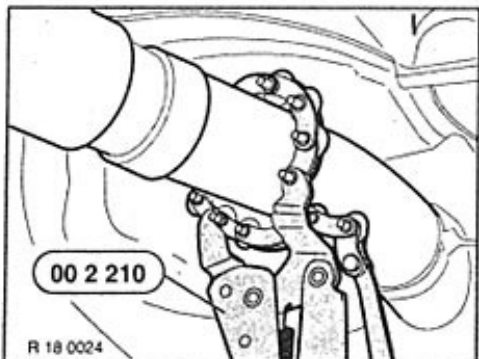
Measure length (A) of pipe section on new rear muffler.



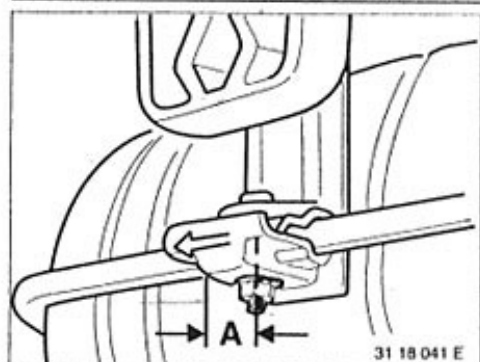
Transfer defined dimension (A) to the installed rear muffler.



Align exhaust system and clamping sleeve in such a way that sufficient space is left from adjacent components



Disconnect exhaust pipe with special tool 00 2 210 and deburr.



Note:

Preload both rubber mounts on rear muffler in direction of travel A = 15 mm.

18 12 ... Dismantling exhaust assembly (M70).

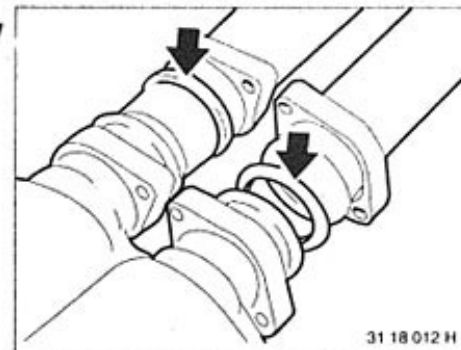
Disconnect catalytic converter from rear silencer unit.

Note:

To avoid distortion of the exhaust assembly once installed in the vehicle, do not tighten connections until assembly is complete - loosen again where applicable.

Unscrew left and right side of flange.

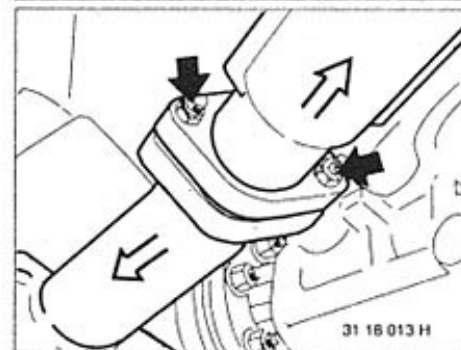
Installation:
Note location of flanges. Tighten screws evenly.
The gap between the flanges must be aligned parallel with one another.



Disconnect silencer assembly.

Installation:

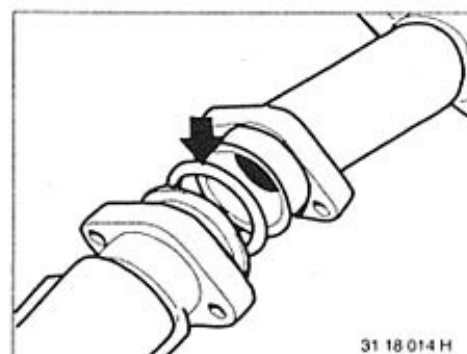
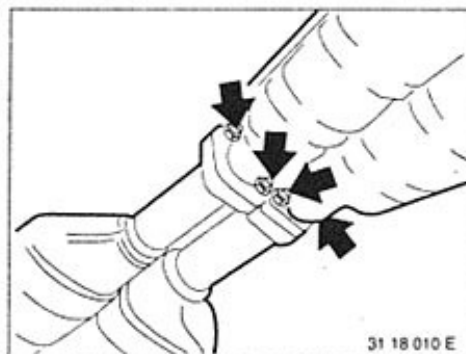
Check seals and replace if necessary.



Remove back left rear muffler.

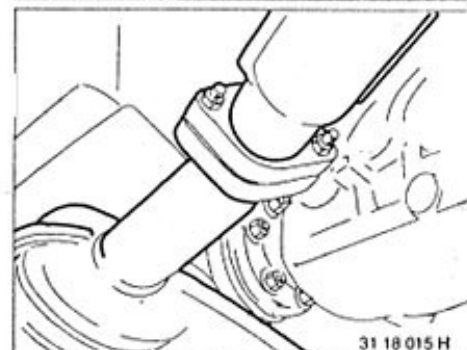
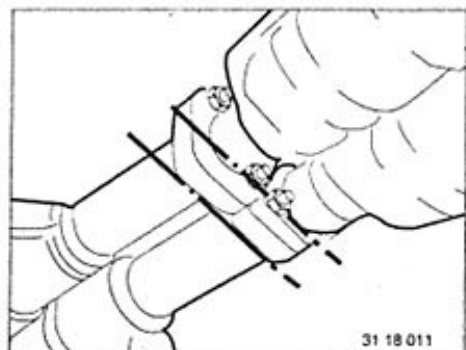
Unscrew flange.

Remove silencer unit.



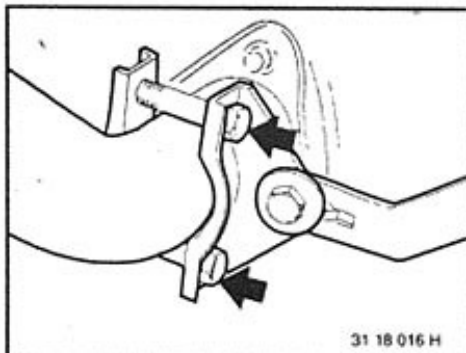
Installation:

Check seal and replace if necessary.



Installation:

Note position of flanges. Tighten screws evenly.
The gap between the flanges must be parallel all round.

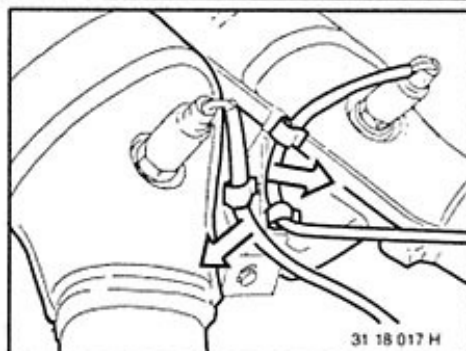


Remove left and right catalytic converters.

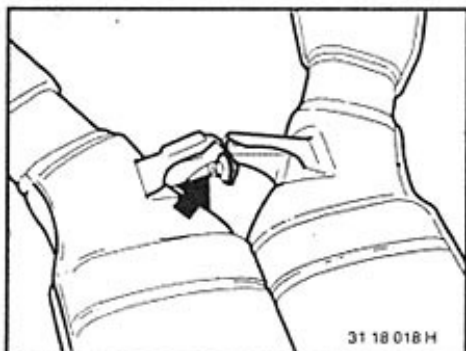
Unscrew bracket.

Installation:

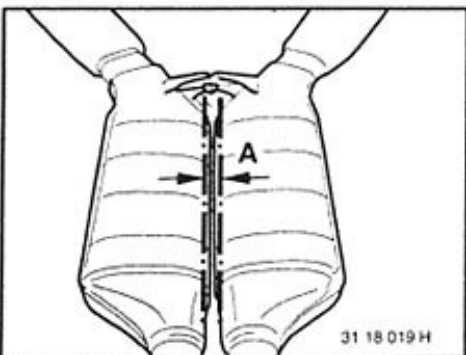
Do not tighten bracket until installation of unit is complete.



Disconnect Lambda oxygen sensor cable from bracket.

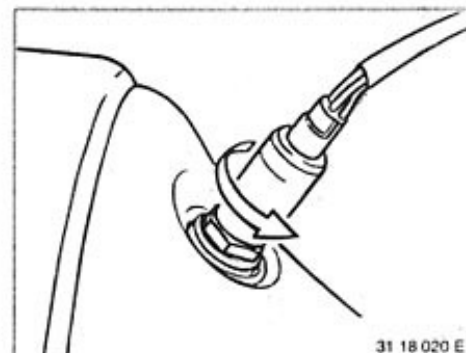


Unscrew connection.



Installation:

There must be a gap of at least $A = 6 \text{ mm}$ between the two catalytic converters.



Removing and Installing Lambda oxygen sensors.

Unscrew and remove Lambda oxygen sensor

Installation:

Coat thread with Anti-Seize**. Tightening torque 11 78 1AZ *

Note:

Do not clean Lambda oxygen sensors and do not bring into contact with lubricant. Protect Lambda oxygen sensors when applying underbody protection.

* Refer to Technical Data

** Refer to BMW Parts Service

18 12 027 Replacing rear right muffler
(connection with welding sleeve)

This operation is identical to
operation 18 10 031

Following operations are required:

Measure pipe section to fit new rear muffler.

Mark out separating point.

Disconnect old rear muffler
(special tool 00 2 210)

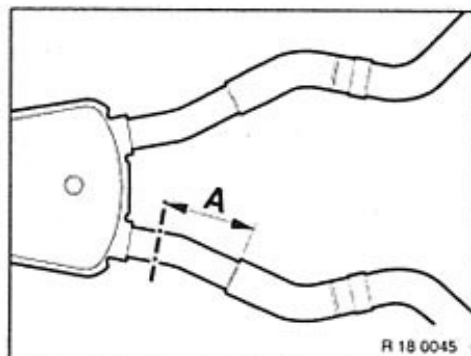
Install new rear muffler with connecting sleeve
and align.

Tack weld connecting sleeve with a few inert
gas spot welds.

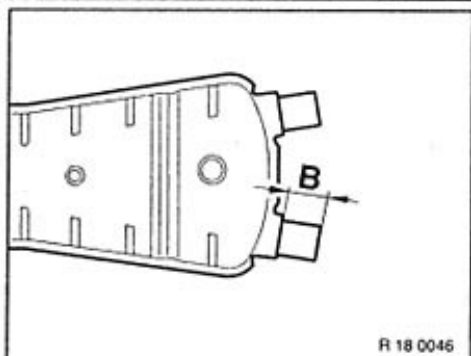
Remove exhaust system remove and weld
until gas-tight (inert gas).

Install complete exhaust system.

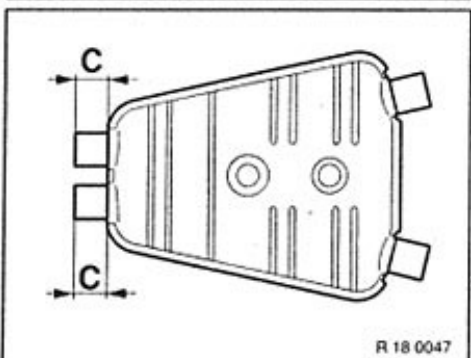
18 12 061 Replacing intermediate muffler (M73)



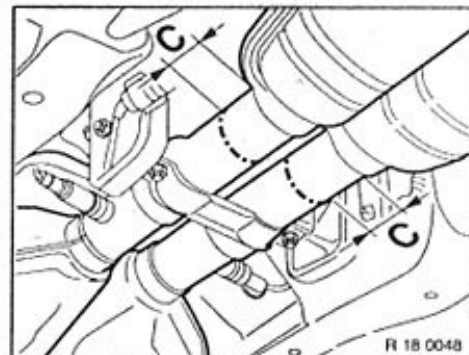
Remove both rear mufflers, refer to 18 10 031



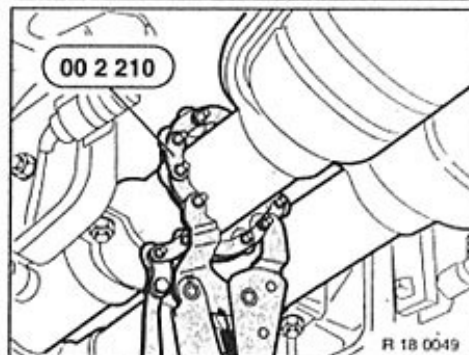
Note:
When defining the interfaces, take account of dimension (B) on new intermediate muffler.



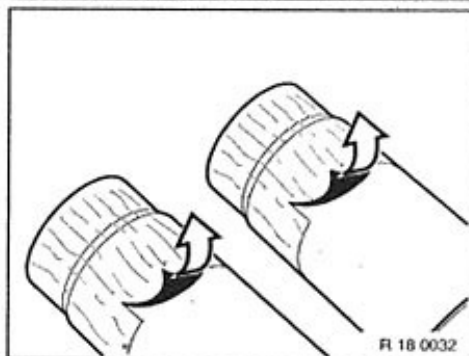
Measure off length (C) of pipe section on new intermediate muffler.



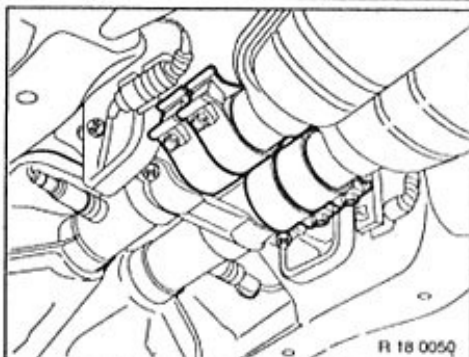
Transfer dimension (C) defined in this way to the installed intermediate muffler.



Disconnect exhaust pipes with special tool 00 2 210 and deburr.



Caution!
Apertures on new intermediate muffler are sealed with adhesive film.
Remove complete adhesive film, including on contact faces of clamping sleeves.

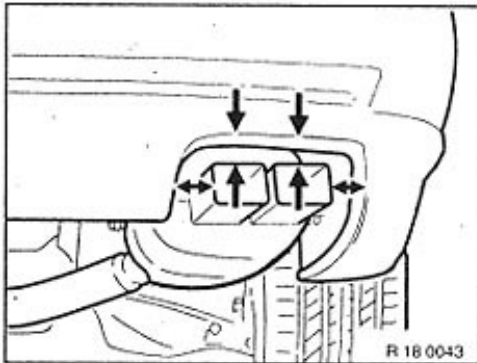


Secure new intermediate muffler with clamping sleeves on catalytic converter.
Nuts point downwards.

Ensure that the separating point is located in the centre of the clamping sleeve.
Ensure sufficient distance to adjacent components.

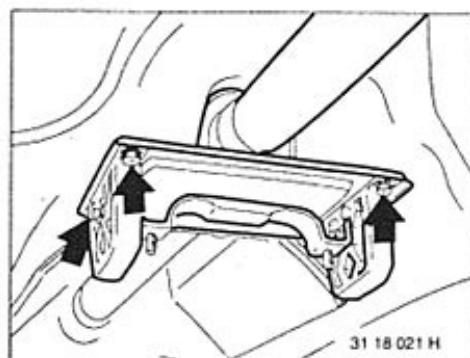
18-12/5

Install both rear mufflers.
refer to 18 10 031



Align exhaust system and tighten down all
clamping sleeves.

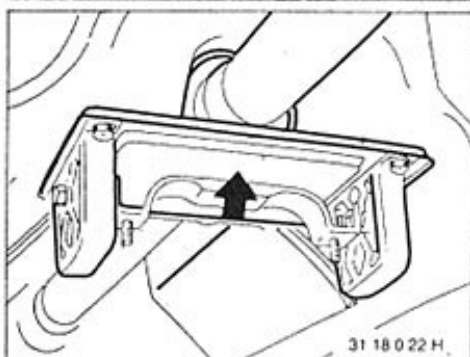
18 21 511 Replacing all exhaust mounts



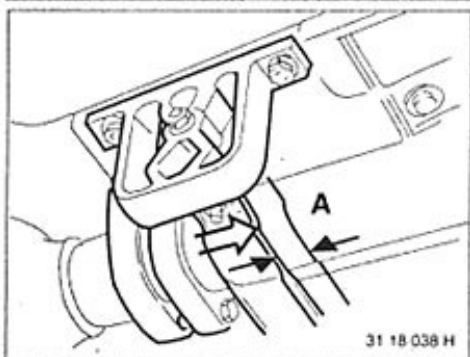
Replace central exhaust mount:

Unfasten bracket
Unscrew rubber mount.

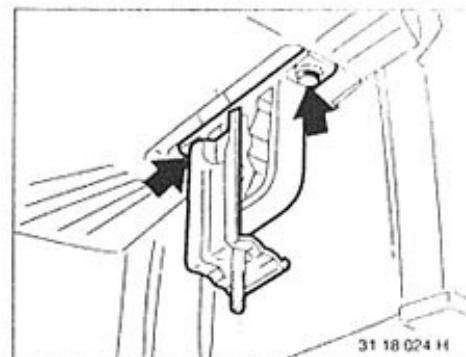
Installation:
Do not tighten bracket until exhaust assembly has been fitted.



Installation:
Note reinforcement plate under rubber mount.



Installation:
Preload rubber mount towards front
A = 10 mm when fitting the exhaust assembly.



Replace rear exhaust mounts:

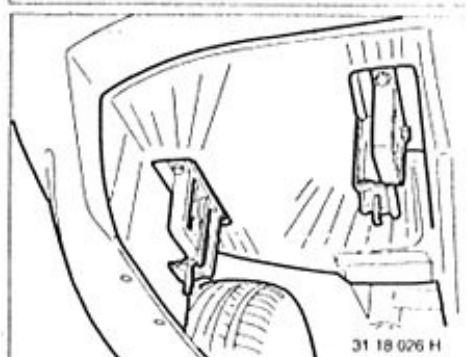
Unscrew rubber mount and bracket.

Caution!
Screw length M8 x 16
Longer screws may touch the underside of the battery.

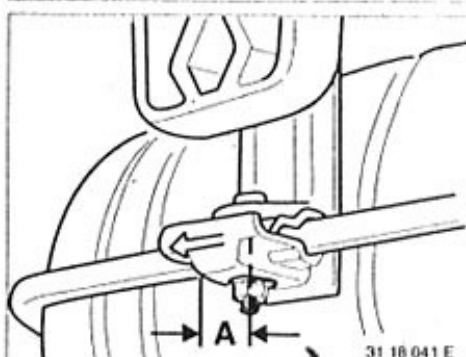


Unscrew bracket.

Installation:
Align bracket in upright position.



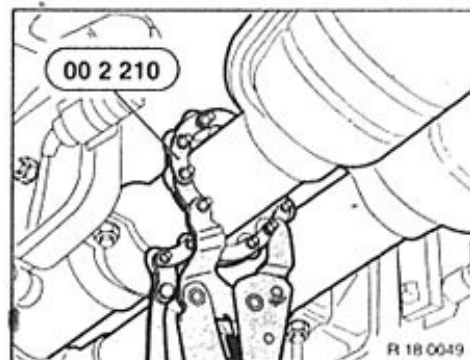
Arrangement of rear suspension points.



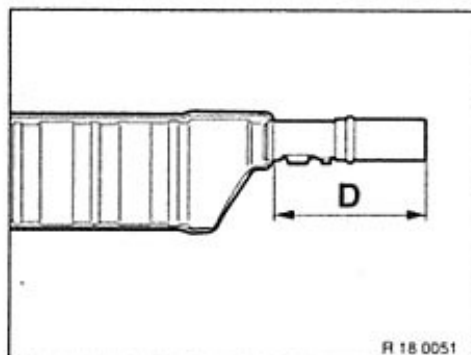
Installation:
Preload rubber mount towards front
A = 15 mm when fitting the exhaust assembly.

18 32 010 Removing and installing or replacing left or right catalytic converter (M73)

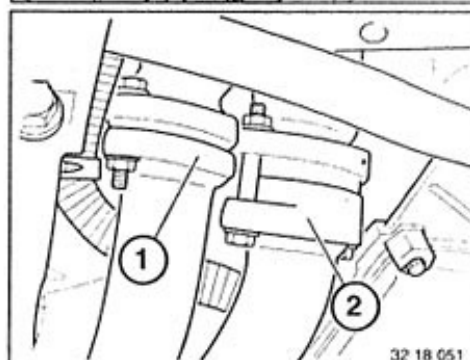
Remove Lambda oxygen sensors.
refer to 11 78 510 / 11 78 610
Repair Instructions for 7 Series E38



Disconnect exhaust pipe at separating point determined using special tool 00 2 210.

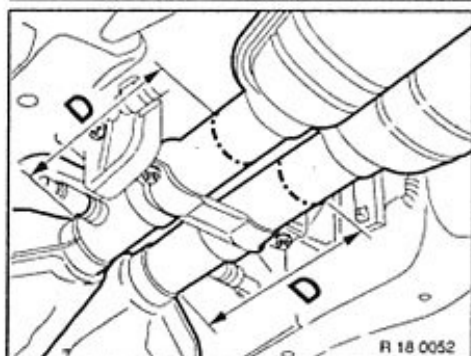


Measure length (D) of pipe section on new catalytic converter.

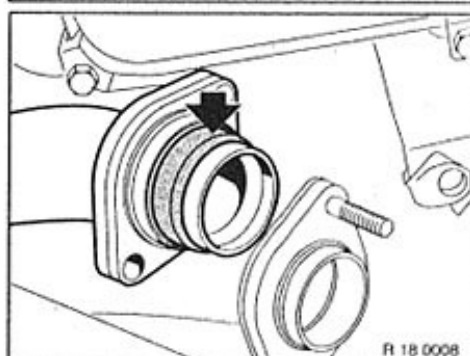


Unscrew and remove catalytic converter from exhaust manifolds.

Installation:
Replace self-locking nuts.
Coat threads with copper paste*.

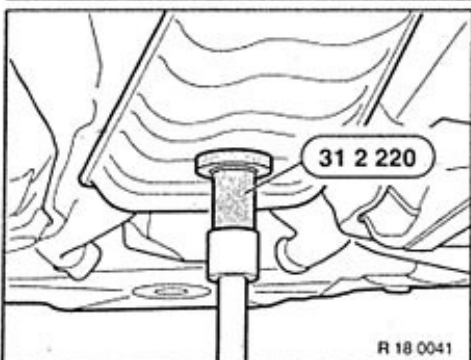


Transfer dimension (D) determined to the installed catalytic converter.

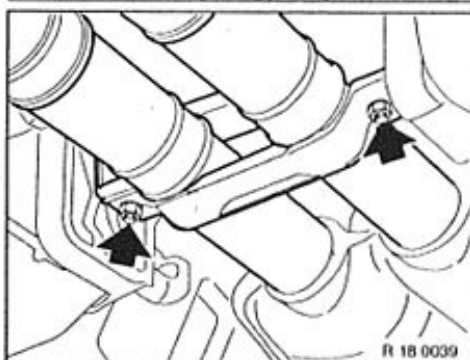


Installation:
Joint is only fitted with a sealing ring on inside pipes.

Check sealing ring and replace if necessary.



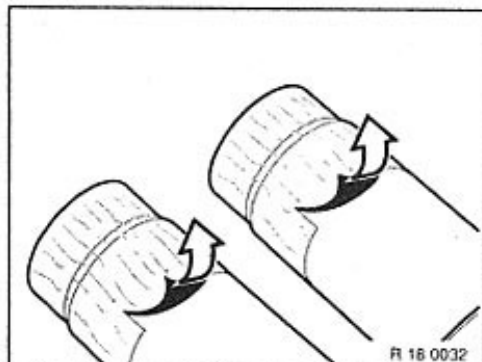
Support intermediate muffler with special tool 31 2 220.



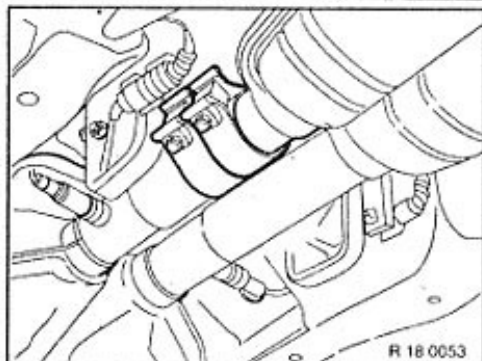
Unscrew and remove mount from catalytic converter.

Remove catalytic converter

* Source of Supply: BMW Parts Service

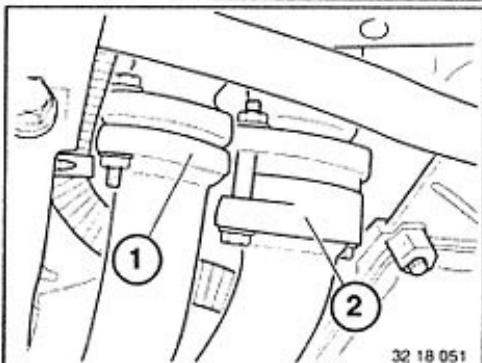
**Caution!**

Apertures on new catalytic converter are sealed with adhesive film.
Remove complete adhesive film, including on contact faces of clamping sleeves.

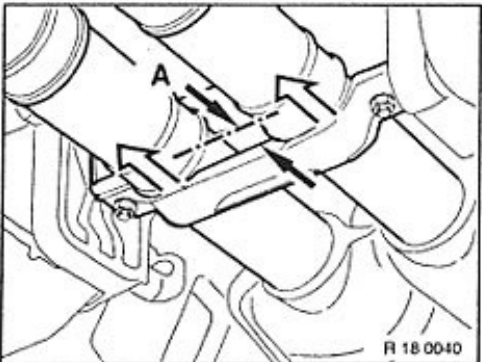


Secure new catalytic converter with clamping sleeve to intermediate muffler.
Nuts point downwards.

Ensure that separating point is in centre of clamping sleeve.
Ensure there is sufficient distance from adjacent components.



Screw on new catalytic converter with exhaust manifold.



Screw down mount on catalytic converter

Installation:

Preload rubber mount in direction of travel
A = 10 mm.